

Proposed Instream Flow Rules**Background Paper****PRIORITIES FOR WATER MANAGEMENT PLANS
MARCH 26, 2001****BACKGROUND**

DES has proposed concepts for revised draft rules that include a general standard for protection of instream flow. The General Protected Instream Flow Standard would not be met if:

1. Stream flow were less than or equal to 0.5 cfs and aggregate consumptive water use exceeded the de minimis amount of 5% of 7Q10.
2. Stream flow were between 0.5 cfs and 1.0 cfs and aggregate consumptive water use exceeded .02 cfs.
3. Stream flow were between 1.0 cfs and 4 cfs and aggregate consumptive water use exceeded .04 cfs
4. Stream flow were greater than or equal to 4 cfs and aggregate consumptive water use exceeded .16 cfs

Water Management Plans would be required for watersheds upstream of designated rivers on which the general standard is not met.

ANALYSIS OF WATER USE DATA AND THE GENERAL STANDARD

DES has compared aggregate average daily water use with estimated median monthly stream flow for watersheds upstream of designated river reaches. Aggregate average daily water use was estimated from water use reporting data for 1995 to 1999. These are the same data that were previously used in the November 14, 2000 draft rules to estimate water use for allocation purposes. Median monthly flows at pour points of 10 digit HUC codes were estimated using existing gage data and the same drainage area transposition methods used to estimate Qvalues at pour points for the November 14, 2000 draft rules.

Table 1 shows those watersheds for which estimated monthly water use is greater than 5% of 7Q10 and estimated monthly median flow is less than 0.5cfs. These are the watersheds for which the general standard is not met.

Watersheds for which the general standard is not met are listed below:

Merrimack River Basin:

Contoocook (2 HUC codes: North Branch and Henniker)
Piscataquog (1 HUC code: Lower Piscataquog River)
Souhegan
Lower Merrimack (2 HUC codes: Litchfield and Hudson)

Other Designated Rivers:

Ashuelot (3 HUC codes)
Lamprey
Exeter

PRIORITIES FOR WATER MANAGEMENT PLANS

We expect that Water Management Plans will involve significant expense and take several years to complete. Therefore they must be prioritized. We propose that plans for watersheds in the Merrimack River Basin be accomplished first because population and associated water use in this basin is likely to grow the fastest. Also, it has been the basin that has generated the most interest during development of the rules. Within the Merrimack Basin, we propose that Plans be prepared starting with the smallest drainage area and proceeding in order of increasing drainage area. It does not appear likely that Water Management Plans developed for the smaller watersheds will need to be renegotiated during preparation of a Lower Merrimack plan. The order of priority for Merrimack Basin watersheds is:

Contoocook (North Branch)

Souhegan

Piscataquog

Lower Merrimack

We propose to prioritize watersheds outside the Merrimack Basin in order of water use during periods when stream flow is less than 0.5 cfs. This is estimated by the sum of water use as a percentage of 7Q10, for months when stream flow is less than 0.5 cfs:

Ashuelot

Exeter

Lamprey

TABLE 1 Aggregate Water User as a Percent of 7Q10

	01070001-060	01070002-120	01070002-170	01070002-180	01070002-210	01070003-020	01070003-030
	Pemigewasset R -	Lower		Merrimack R-	Merrimack R-	North Branch	Contoocook -
	Campton	Piscataquog	Souhegan	Litchfield	Hudson	Contoocook	Henniker
Drainage Area (sq. miles)	409	218	171	3465	4045	121	590
January	5.0	4.7	0.0	0.7	0.0	46.4	1.2
February	2.1	5.6	0.0	0.0	0.0	46.9	1.4
March	0.0	5.8	0.0	0.0	0.0	44.8	0.8
April	0.0	5.2	0.0	0.0	0.0	46.1	1.1
May	0.0	6.8	0.0	0.4	0.0	44.3	1.9
June	0.0	7.1	2.0	4.4	0.3	52.2	4.6
July	0.0	5.3	7.6	7.7	4.5	52.0	4.5
August	0.7	2.9	9.3	8.6	5.4	47.0	5.0
September	0.3	0.9	2.8	5.0	1.9	46.5	3.5
October	0.0	2.1	0.0	0.8	0.0	47.0	3.0
November	3.0	3.8	0.0	0.1	0.0	42.6	1.8
December	5.0	4.4	0.0	0.0	0.0	41.8	1.9
<i>SUM of Months where</i>							
<i>flow < 0.5 cfs</i>	0.00	11.10	19.65	13.59	7.28	192.47	16.03
	01060002-010	01060002-030~	01080201-010	01080201-040	01080201-050	01060003-100*	01060003-110*
	Upper Saco	Lower Saco	Upper Ashuelot	Middle Ashuelot	Lower Ashuelot	Lamprey	Exeter
Drainage Area (sq. miles)	230	424	116	292.2	415	198	76
January	6.8	6.9	9.0	0.0	0.0	0.5	3.6
February	3.7	4.1	7.8	0.0	0.0	0.0	3.3
March	0.8	1.8	11.8	0.0	0.0	1.0	3.4
April	0.3	1.5	5.9	0.0	0.0	0.7	7.0
May	0.2	2.0	7.6	0.0	0.0	0.0	6.5
June	0.3	2.4	15.2	4.3	3.0	3.6	7.4
July	0.3	2.7	18.1	0.0	2.2	7.2	11.1
August	0.3	2.1	18.5	10.8	5.2	12.2	10.2
September	0.2	1.6	16.4	0.0	2.2	8.0	10.2
October	0.2	1.5	6.5	0.0	0.0	3.9	10.5
November	2.3	3.4	9.7	0.0	0.0	2.2	10.7
December	6.6	6.6	6.6	0.0	0.0	1.6	9.9
<i>SUM of Months where</i>							
<i>flow < 0.5 cfs</i>	0.00	0.00	59.59	10.83	9.66	31.33	49.46
<i>Note: Shaded cells indicate Months where mdiam flow > 0.5 cfs</i>							

* Only the area upstream of designated regions considered.

~ Only the area in NH considered.